

ABSTRACT OF THE DISCLOSURE

An efficient fluid cleaning system. The efficient system includes a first mechanism
5 for changing the pressure of a fluid from a first pressure to a second pressure, the second
pressure lower than the first pressure. A second mechanism distributes the fluid within an
evaporation chamber at the second pressure. The evaporation chamber includes an
evaporation surface having capillary channels for dispersing oil about the evaporation
surface via capillary action to facilitate evaporation of contaminants from within the fluid.
10 In a specific embodiment, the capillary channels are spiral capillary channels and the
system further includes a vent through a ceiling of the evaporation chamber. The vent
includes a valve biased in an open position and lacking a cracking pressure. The valve
prevents the escape of the fluid from the system but allows gases to escape from the
system unencumbered. The evaporation surface has perforations therethrough that allow
15 the fluid to pass through walls of the chamber and onto the evaporation surface. The
perforations are distributed in at least two dimensions relative to the evaporation surface
to facilitate oil dispersion about the surface and thereby maximize exposed surface area.